The Mobility Air Forces:

Unifying Culture for Contemporary Challenges

A Monograph

by

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The time has come for another significant shift in air mobility culture. Historically, this culture had three subcultures, intratheater, intertheater, and air refueling. These subcultures existed due to gaps between operating environments. The gaps have largely disappeared. The distinctly different subcultures must disappear as well.

Gaps between subcultures have never been hard and fast. Vietnam narrowed the gaps to a point where the Air Force consolidated control of airlift forces. Air Force reorganization in the 1990s divided airlift forces once again, but placed air refueling and intertheater forces together for the first time. This reorganization led to difficulties during initial actions in Operation ENDURING FREEDOM, Afghanistan, 2001. A cultural shift brought much success during Operation IRAQI FREEDOM in 2003 and beyond.

The elimination of significant subcultures within the Mobility Air Forces and the reconsolidation of all air mobility assets, to include dedicated theater assets, will bring tremendous benefits in the future joint operating environment. This new subculture must maintain a strategic vision, but with a tactical edge. Leadership must continue to be proactive and facilitate cultural change, but ultimately, this change will occur because of the current environment and the emerging tactical mindset of newer members of the organization.

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Abstract

The Mobility Air Forces: Unifying Culture for Contemporary Challenges by Lt Col(s) Glen R. Downing, USAF, 57 pages.

The time has come for another significant shift in air mobility culture. Historically, this culture had three subcultures, intratheater, intertheater, and air refueling. These subcultures existed due to gaps between operating environments. The gaps have largely disappeared and they will not return. The distinctly different mindsets found in the subcultures must disappear as well.

Air mobility is a major subculture of the overall U.S. Air Force culture. As such, it shares many of the same basic assumptions, derived from airpower's inherently strategic nature. The strongest assumption is the ability of airpower to be decisive. This decisiveness is facilitated through centralized command and control applied flexibly, with unity of effort, by an Airman. Not all Airmen believe strongly in the strategic nature of the Air Force, however. This has led to controversy concerning the proper focus of Air Force efforts, tactical or strategic. These values, assumptions, and controversies have driven cultural, doctrinal, and organizational change within air mobility throughout its history.

Gaps, or seams, between the theater and strategic environments have never been hard and fast from an air mobility perspective, not even for the air refueling force during the height of the Cold War. Theater airlift forces have flown predominantly logistical missions. Intertheater forces have flown in combat environments, sometimes frequently. Air refueling assets, have never actively engaged in a nuclear attack, but have participated in many theater contingency operations. Vietnam narrowed the gap between theater and strategic to a point where control of airlift forces was consolidated. Air refueling remained an integral part of Strategic Air Command. Air Force reorganization in the 1990s divided airlift forces once again, but placed air refueling and intertheater forces together for the first time. This reorganization, its focus on strategic missions, and the strength of the three subcultures led to difficulties during initial actions in Operation ENDURING FREEDOM, Afghanistan, 2001. A demand for tactical awareness, however, resulted in a cultural shift that brought much success during Operation IRAQI FREEDOM in 2003 and beyond.

The elimination of significant subcultures within the Mobility Air Forces and the reconsolidation of all air mobility assets, to include dedicated theater assets, will bring tremendous benefits in the future joint operating environment. This new subculture must maintain a strategic vision, but with a tactical edge. Leadership must continue to be proactive and facilitate cultural change, but ultimately, this change will occur because of the current environment and the emerging tactical mindset of newer members of the organization.

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CHAPTER ONE

INTRODUCTION

Mobility Air Forces (MAF)[1] crews currently face combat on a daily basis. Given the

increase in risk that comes with war, there is a need to change the mobility culture to make it

more combat focused, more capable of meeting the challenges of a non-permissive environment.

Should Air Mobility Command direct cultural change from the top down or allow events and the

current era to infuse cultural change from the bottom up? This monograph provides an in-depth

study of the MAF culture and analysis of its capability to cope with current and future operations

in order to make recommendations whether the need for change is accurate and how the change

should occur. Issues addressed include, what are the drivers and factors that shape MAF culture?

Did this culture lead to a failure to adapt to the challenges of the Global War on Terrorism? What

is the role of leadership in affecting cultural change? What are the likely future roles and

missions of the MAF? How must the MAF culture change to successfully fulfill those roles and

missions? Answering these questions provides a set of recommended changes in doctrine,

organization, training, leader development, materiel, personnel, and facilities.

Background

Threats to air mobility aircraft are far greater since the beginning of Operation

ENDURING FREEDOM (OEF) in October 2001 than those routinely experienced in the thirty

years prior. [2] The current threat level has never been seen by the C-17 and not seen by the

remainder of the air mobility fleet since the Vietnam War. In addition, the missions that crews

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[1] The MAF is defined as all air mobility elements of the "…active duty forces, Air National Guard (ANG) forces, Air Force Reserve (AFR) forces, government civilians, and civil air transportation partners." in Department of the Air Force, U.S. Air Force Doctrine Center. AFDD 2-6, *Air Mobility Operations*. (Maxwell AFB AL, 25 June 1999), 2. This paper will focus predominately on the military component of the MAF. Air Mobility Command is the designated lead agency of the MAF.

[2] AFDD 2-6 (9) defines air mobility as "…a system of systems that combines airlift, air refueling, and air mobility support assets, processes, and procedures into an integrated whole." This paper will focus on the airlift and air refueling aspects of air mobility.

must accomplish in this threat environment are more dynamic and carry more importance and urgency. The acceptable risks are greater now for a given mission than during peacetime. One former senior mobility officer has stated, "We're in a wartime situation, so rules about the risks to aircraft going into harm's way have changed."[3]

Noting these changes, the Headquarters, Air Mobility Command, Director of Operations (HQ AMC/A3), Major General Mark Volcheff sent a message to all MAF Wing and Group Commanders on March 3, 2004 addressing a necessary cultural shift. The introductory paragraph reads:

> The Mobility Air Forces are the cornerstone of our nation's ability to project military power world-wide. The capability to conduct global, sustained airlift operations, in non-permissive environments, is unique to the United States and is critical to achieving our national objectives. The Global War on Terrorism has demonstrated the ability of the MAF to adapt and flex to new missions and taskings. Since the early days of OEF, we have evolved our Tactics, Techniques, and Procedures (TTPs) to meet these missions and taskings. While our TTPs have rapidly evolved and adapted in the face of this challenging combat environment, our shift in culture has not necessarily kept pace. AMC recognizes this 'cultural shift' as necessary on our growth path to the future. We must change our mobility culture into a combat focused and purposed culture…we will all be tacticians….
>
> …We are going from a culture of rules and regulations to a command of tactical thinking warriors…[4]

Clearly, Major General Volcheff and his staff perceive the need for cultural change and are beginning or more accurately, continuing, a process to affect that change. The change is the elimination of the gap between the mindsets of crews who perform intertheater airlift, intratheater airlift and air refueling missions.[5]

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[3] Bruce Rolfson. "Baghdad Flights Continue Despite Enemy Fire." [On-line] Available from http://www.defensenews.com/story.php?F=2578963; Internet: accessed 21 September 2004, 2.

[4] Major General Mark Volcheff to MAF WG/OG/CCs, "Changing Our Mobility Culture," 3 Mar 2004. [On-line] Available from https://amc.scott.af.mil/do/dok/dok.htm; Internet: accessed 25 August 2004.

[5] AFDD 2-6 (79) defines intertheater airlift as "Airlift that operates between the continental United States and a theater or between theaters." Intratheater airlift is "The common-user air transportation and delivery of personnel and equipment within a CINC's AOR [Commander in Chief's Area of Responsibility]." Air refueling is "The capability to refuel aircraft in flight, which extends presence, increases range, and allows air forces to bypass areas of potential trouble."

Research Methodology and Organization

The overall research methodology is chronological survey. First, however, a definition of organizational culture is required to examine MAF culture. The key elements and origins of MAF culture are determined through historical analysis. The ability of this culture to adapt to the crises of OEF and Operation Iraqi Freedom (OIF) reveals potential shortcomings of the current culture. The future external environment faced by the MAF defines how the culture must adapt for continued success. Leadership has a role in this adaptation and must take action to facilitate a cultural change.

Chapter two presents a thorough understanding of culture as it relates to organizations and the military. This chapter defines organizational culture and discusses its dominant characteristic. Examination of the US Air Force culture as a whole provides a basis for the examination of MAF culture.

Today's mobility culture developed from the heritage of intertheater airlift, intratheater airlift and air refueling support to the nuclear bombardment force. Chapter three presents an analysis of each of these subcultures to determine the overall mobility culture, as it exists today. A critical aspect of the current culture is how each community, or subculture, adapts to a changing external environment.

One critical indicator of a need for change is the existence of gaps in effectiveness in current military operations. Chapter four examines the contemporary operating environment (COE) and recent lessons learned to determine potential causal factors attributable to culture. The analysis focuses on OIF and OEF to determine deficiencies in the current mobility culture.

Chapter five looks to the future. The Joint Operating Environment (JOE) presents new challenges to mobility forces. Transformational efforts by both the US Army and the US Air Force define potential new missions. The issues discussed in this chapter define the future of the MAF for the next several years.

Chapter six presents necessary cultural changes. Gaps between the current mobility culture and the required culture determine the required changes. Leadership has a role in making these cultural changes. Lastly, the conclusion contains specific leadership actions recommended for change.

CHAPTER TWO

ORGANIZATIONAL CULTURE

Organizational Culture Defined

When one talks about organizations having a culture, one is assigning personality traits to that organization. Edgar H. Schein examined many potential character traits and sources of culture within organizations in his landmark study, *Organizational Culture and Leadership*. Schein concluded that organizational culture is:

> A pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems.[6]

Schein's theory discusses culture on three levels: artifacts, espoused values, and basic underlying assumptions. Artifacts are the "visible organizational structures and processes" of a group.[7] Organizational structure, command, control, and communications (C3) relationships, mission, aircraft flown, and doctrine represent the artifacts most pertinent to this monograph. Cultural artifacts lend themselves well to observation since they are visible, however, they are very difficult to decipher. An understanding of how they came about, history, and investigation into the lower levels of culture, beginning with espoused values, reveals the meaning behind artifacts.[8]

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[6] Edgar H. Schein, *Organizational Culture and Leadership* (San Francisco: Jossey-Bass Publishers, 1992), 12.
[7] Ibid., 17.
[8] Ibid., 17-18.

Espoused values are the "strategies, goals, and philosophies" an organization outwardly

states is adheres to.[9] Values become part of an organizational culture only after socialization, that

is, after the group as a whole shares them and applies them to the organization's behavior.

Therefore, shared values predict behavior. Not all organizations adhere to their espoused values.

The difference between espoused values, what people say they will do, and actual behavior, what

they do, reflects something deeper.[10]

The deepest level of culture, the level most hidden from direct observation, is basic

assumptions. Basic assumptions are "beliefs, perceptions, thoughts, and feelings" that are "…so

taken for granted that one finds little variation within a cultural unit."[11] These basic assumptions

tell a group how to feel, how to react, and "…what is important to pay attention to."[12]

John P. Kotter defines culture in much similar terms. "*Culture* refers to norms of

behavior and shared values among a group of people."[13] Kotter expands his definition:

> Norms of behavior are common or pervasive ways of acting that are found in a
> group and that persist because group members tend to behave in ways that teach these
> practices to new members, rewarding those who fit in and sanctioning those who do not.
> Shared values are important concerns and goals shared by most of the people in a group
> that tend to shape group behavior and that often persist over time even when group
> membership changes.[14]

Kotter's definition reflects the espoused value level of Schein's cultural model. Norms of

behavior and shared values partially reveal basic assumptions. Shared values, however, lie very

close to the basic assumption level and are difficult to observe and change.

Three problems are associated with these definitions. The first is socialization. Both

authors refer to socialization as the process through which newcomers acquire the group's

culture. Only full-fledged members know the true culture of the organization. The process new

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[9] Ibid., 17.

[10] Ibid., 19-21.

[11] Ibid., 21-22.

[12] Ibid., 22.

[13] John P. Kotter, *Leading Change* (Boston: Harvard Business School Press, 1996), 148.

[14] Ibid.

members go through to become permanent members reveals much about the underlying assumptions of the group.[15] In the military environment, training is largely the process of socialization.

Second, Schein intentionally avoids addressing behavior in his definition. The primary reason for such avoidance is an inability to determine the cause of behavior. Schein argues that either "cultural predisposition" or stimulation from the "external environment." may cause overt behavior.[16] Kotter, though making behavior a key part of his definition, admits that norms of group behavior are only "somewhat invisible" making them more overt than shared values, however they are less hard to change.[17]

Last, Schein asks, "Can a large organization have one culture?"[18] Air Mobility Command is certainly a large organization. It includes over 60,000 active duty personnel and 85,000 Airmen assigned to the Air Force Reserve and Air National Guard.[19] Additionally, the MAF has a small number of forces assigned to the Pacific Air Forces and United States Air Forces in Europe. Schein found that as organizations grow in size, they begin to form subgroups. These subgroups will have subcultures that are both a part of, and separate from, the overall organizational culture.[20] Later chapters will address the formation of subcultures within the MAF and how it has affected the overall organizational culture.

The Leader and Culture

A unique relationship exists between organizational culture and the leader. Early in an organization's development, the dominant leadership personality helps shape the organizational culture. Organizations age and mature, eventually producing leadership from within. Leaders are

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[15] Schein, 13; and Kotter, 150.
[16] Schein, 14.
[17] Kotter, 149.
[18] Schein, 14.
[19] Air Mobility Command. Director of Plans and Programs. *Command Data Book* (Scott AFB IL: HQ AMC/A51RS, May 2004), 35-37.

products of the organizational culture they come from. "Culture and leadership are two sides of the same coin...."[21] Culture comes from two places, depending on the age of the organization. Leadership creates the culture of newly formed organizations. Older organizations produce changes to culture in a much more emergent manner.[22] A skilled and observant leader must recognize these cultures and manage them in order to gain success. Leaders who do "...not become conscious of the cultures in which they are embedded..." will find that "...those cultures will manage them."[23]

The U.S. Air Force Culture

Air Mobility Culture is a subculture within the overall U.S. Air Force culture. These cultures share many of the same artifacts, values, norms of behavior and basic assumptions. This section introduces the primary characteristics of the U.S. Air Force culture and identifies its subcultures.

The most basic assumption of the founders of the Air Force was the inherent value of strategic bombardment as a strategy for war. Strategic bombardment and its associated values were the primary reasons for the establishment of a separate Air Force. The assumption that strategic bombardment represented a new, more powerful method of warfare created three values. These values are "globalism," "indivisibility," and "decisiveness."[24]

One of the most evident artifacts of globalism is centralized C3. The lessons learned in the skies over North Africa gave rise to the doctrinal concepts of centralized control and

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[20] Schein, 14.
[21] Ibid., 15.
[22] For a more detailed discussion of contemporary theories of emergent culture see Richard Seel, "Culture and Complexity: New Insights on Organizational Change," *Organisations & People* Vol. 7, No. 2 (2000): 2-9.
[23] Schein, 15.
[24] Colonel Mike Worden, *Rise of the Fighter Generals: The Problem of Air Force Leadership, 1945-1982* (Maxwell AFB AL: Air University Press, 1998), 33-35.

decentralized execution. Strategic bombardment forces took the concept of centralized C3 even

further, providing a global weapon controlled only by the Joint Chiefs of Staff.[25]

Indivisibility is represented by the statement that airpower should be employed "…as a

single entity…" under the control of an Airman.[26] Not only does it imply unity of effort, but also

flexibility to accomplish both tactical and strategic missions as seen fit by the Airman in charge.[27]

These artifacts exist in today's doctrine as well.

Decisiveness implies the ability of airpower to attain victory either as the dominant arm

of warfare or independently.[28] Nearly all the great airpower theorists, most notably Douhet and

Brigadier General Billy Mitchell, advocated the ability of airpower to change warfare and achieve

decisive victory without great land or sea battles. Technology is the key enabler of decisiveness

and the pursuit of technology is an obvious value of the Air Force.

Three dominant subcultures existed in the early Air Force. These were the strategic

bomber force of Strategic Air Command (SAC), the fighter pilot force of Tactical Air Command

(TAC), and the nuclear missile force of SAC. Each shared unique viewpoints on the role of the

Air Force in combat.[29]

The strategic bomber force dominated the Air Force throughout much of its history.

Artifacts of the bomber community reveal the ever-present nuclear alert mission designed to

prevent attack from the former Soviet Union. As previously discussed, the hallmark of this

mission was tightly centralized command and control. The nuclear mission did not allow for

mistakes or independent action.

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[25] Ibid., 33-34.
[26] Ibid., 34.
[27] Ibid., 34-35.
[28] Ibid., 35.
[29] Lieutenant Colonel (Ret) James M Smith, "Air Force Culture and Cohesion," *Aerospace Power Journal* Vol. XII No. 3 (Fall 1998): 42.

Tightly centralized command and control from the national level presented many problems to the Air Force and SAC during Vietnam and beyond. Chapter three will discuss how this specifically affected the air refueling fleet during its employment in Vietnam.

Technology also proved to limit the ability of SAC to adhere to its concept of centralized command and control and even true global strategic bombardment. C3 systems were not robust enough. Aircraft lacked the range and navigational capabilities for true worldwide employment. These shortcomings caused the bomber force to place great value on technology in order to attain their vision.

The fighter pilot community in TAC was the greatest rival of SAC. This community advocated tactical airpower, "…from close air support to the Army to the delivery of tactical weapons on the battlefield."[30] TAC took second chair to SAC until the 1980's. Korea gave the first boost to the tactical airpower advocates, but was not enough to allow them to dominate the Air Force. Vietnam allowed the TAC community to finally achieve equal footing, and eventually dominance over the bomber community.[31]

The greatest value of the fighter community is technology. Lieutenant Colonel Smith points this out by examining the artifacts of the fighter dominated Air Force. When comparing the central campus areas of West Point and the U.S. Air Force Academy, Smith notes West Point reserves this special ground for busts of the U.S. Army's greatest leaders. The Air Force Academy displays busts of leaders, but aircraft static displays, the "technologies of flight," dominate the central area.[32]

Other values espoused by the tactical community reflect its view of war. The best use of airpower is to support other arms of the nations military. The operational and tactical levels of war achieve decisive victory, not the strategic. Last, only a tactically minded Airman can lead the

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[30] Ibid.
[31] Worden, 211-228.
[32] Smith, 43-44.

Air Force. In fact, by the end of 1997, 10 of 11 active duty four-star generals were fighter pilots.[33]

The missile community shares many of the values and artifacts of the bomber community within SAC. The missile itself is the primary artifact that distinguishes the two. Like the bomber, the missile lacked the technology to be truly effective, leading to the pursuit of technology once again.[34]

The pursuit of superior technology reflects the Air Force's ability to adapt to external demands, one of Schein's key elements of the development of culture. There was a cost to this adaptation, however. The Air Force eventually lost its focus on the core mission of strategic bombardment. Without a unifying mission, the subcultures naturally split further apart, becoming associated with their technology and their jobs, rather than the Air Force as a whole. [35]

Schein points out the criteria an organization uses to measure its success are one of the indicators of its ability to adapt externally, and ultimately, its culture.[36] The "…emphasis on quality over quantity," reflects the importance of technology.[37] Individual pride comes from the superiority of the technology of a mechanic's or pilot's aircraft, not in the role the aircraft or Airman plays in the organization's success.

The fall of the Soviet Union in 1989 and Operation DESERT STORM, the liberation of Kuwait in 1991, combined with the new dominance of the tactical airpower subculture to begin a process of cultural reunification within the Air Force. This reunification is centered around an operational focus, rather than strategic.[38] In 1992, the bomber and fighter subcultures began a delicate merging process, as the bomber forces of SAC and the fighter forces of TAC became part of Air Combat Command (ACC).

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[33] Ibid., 45.
[34] Ibid., 43.
[35] Ibid.
[36] Schein, 52.
[37] Smith, 44.

The missile community merged with the growing space power subculture to form a new missile and space subculture. Support to operational warfighting is the clear focus of this group. Survival within the new Air Force construct has forced this community to adapt the artifacts of the fighter subculture. These artifacts include the same leather jackets, flight suits, squadron designations; even the doctors have been renamed missile and space surgeons to emulate the flight surgeon within the flying community.

It is within this overall organizational culture that the air mobility culture developed. The Air Force culture assumed the superiority of strategic bombardment, but adapted over time to a fundamental belief in operational level warfare. The cultural values include globalism, indivisibility, decisiveness, and possibly above all, technology. Artifacts include centralized control; the concept that only an Airman can control airpower; and the products of technology, the aircraft themselves.

CHAPTER THREE

HISTORICAL PERSPECTIVE

The roots of mobility culture are deep, beginning almost with the birth of aviation over one hundred years ago. Understanding the historical underpinnings of cultural growth within the MAF is essential to evaluating the contemporary culture. For the purposes of this study, Lieutenant Colonel Charles Miller's eras of airlift history provide organization. These eras are: pre-World War II, World War II, postwar, 1955 to 1965, Vietnam War, and post-Vietnam War.[39] Each era reveals norms of behavior and shared values among dominant cultures and subcultures within the mobility arena of airlift and air refueling.

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[38] Ibid., 45.

[39] Lieutenant Colonel Charles E. Miller, *Airlift Doctrine* (Maxwell AFB AL: Air University Press, 1988), xi.

Pre-World War II

Many core mobility cultural values formed before WWII because of the cultural values, budgetary priorities, and doctrinal disputes within the Army as a whole. These values include the pursuit of technology and the indivisibility of airpower. The primary airlift mission during this era was transportation in support of other Air Service, later Air Corps, functions. A tactical use for air mobility was yet to be developed.[40]

Technology was required to increase the range of the Army's observation, pursuit, and bombardment aircraft. Civilian record seekers and aircraft aficionados attempted in-flight refueling as a method of extending range. Major Henry "Hap" Arnold, later Chief of the Army Air Forces supervised early military attempts at air refueling in 1923. Arnold's team met with reasonable success and planned more extensive testing for 1929. This more extensive testing involved many of the people who became key leaders in the Army Air Force and later the U.S. Air Force. Future leaders such as Carl Spaatz, Harry Halverson, Elwood Quesada, Ira Eaker and Ross Hoyt all participated. Despite very successful early proofs of concept, technology hindered widespread use of air refueling until after World War II. The pursuit of technology shaped the future leadership of the Air Force and its growing culture.[41]

Airlift also struggled with technology. Funding for the Army Air Service, later to become the Army Air Corps was scarce. Since simple transportation was the primary mission of airlift within the Air Corps, it was reasonable for the War Department to call on the Air Corps to purchase civil derivative aircraft for military transport and to minimize their active forces, relying instead upon wartime augmentation by the civil airline fleet.

Army officers used technology to argue against an over reliance on civil aviation. Chief of the Air Corps, Major General Benjamin Foulois, presented his case in 1934 arguing that

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[40] Ibid., 1.
[41] Vernon B. Byrd, *Passing Gas: The History of In-flight Refueling* (Chico CA: Byrd Publishing, 1994), 21,26.

though commercial transport aircraft are efficient passenger carriers, they lack the military effectiveness required to accomplish the mission of supporting forward deployed troops.[42] Aircraft were needed that could carry maintenance personnel and parts to support bombardment and pursuit aviation aircraft on the front lines. Commercial aircraft had neither the weight carrying capacity, cargo handling capability, or speed to meet this mission. The argument of effectiveness versus efficiency remains a hallmark of airlift culture even to this day.

The indivisibility of airpower, as it relates to air mobility, was a crucial issue in the 1930s. The Army War College conducted a seminar on *Motor and Air Transportation in the Theater of Operations*. Miller reports that the 1932-33 class made recommendations that the "control of all airplanes in a theater of operations be centralized in the commander of the theater."[43] Historical support included many recent operations and exercises.

General A.W. Robins, Chief, Air Corps Materiel Division, reinforced the indivisibility argument. In 1936, he stated supply depots would operate all cargo aircraft. The aircraft would remain on call to support tactical units in any way necessary.[44] Materiel Division would then support the entire General Headquarters (GHQ) Air Force for all cargo or personnel transport needs. Little mention was made of support to ground forces since the Air Corps viewed its transportation role as supporting air forces only.

It is likely the norms of behavior within the growing mobility culture during the pre-war era were largely homogenous. Shared values largely reflected those of the Air Corps as a whole. The pursuit of technology and continued centralized control reflected the strong basic assumption that the Air Corps needed to be an independent service based upon it own theories of warfare.

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[42] Miller, 7.
[43] Major Hugh Knerr, "Air Force Logistics and the Cargo Transport with comments by Captain P.S. Seaton" (30 March 1932), a summary, with extensive quotations of Knerr's and Seaton's papers by an unknown author; quoted in Miller, 13.
[44] Miller, 15.

World War II

The rapid growth in the importance of air transportation during World War II gave rise to the two dominant airlift subcultures in the MAF today. These subcultures are the strategic, or intertheater airlifters, and the tactical, or intratheater airlifters. The origins and characteristics of these subcultures are important.

Air mobility experienced many organizational changes throughout the early parts of the war. The result of these changes was Air Transport Command (ATC) and Troop Carrier Command (TCC). ATC assumed responsibility for ferry operations, transportation outside the continental United States (CONUS), and command and control (C2) of overseas air routes. ATC's primary mission, intertheater, or strategic, airlift was primarily the logistical movement of personnel and materiel between theaters of operations or between the CONUS and overseas destinations. All this applied where it did not directly overlap the mission of TCC. [45]

TCC units assumed the theater responsibilities, to include support to airborne and glider units. TCC's mission, intratheater, or tactical, airlift is best viewed as airlift within a theater of operations in support of combat operations. Logistical resupply, though the largest mission, is only one of the varied missions of tactical airlift. Tactical, or intratheater airlift, also includes forward area resupply via airdrop, and forced entry (airborne) operations. [46]

The separation of air mobility forces between two commands violated the espoused value of globalism. ATC and theater commanders split C3 responsibilities for air mobility. This separation and a perception that ATC and TCC had widely disparate missions led to a view

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[45] Office of History, Military Airlift Command, *Anything, Anywhere, Anytime: An Illustrated History of the Military Airlift Command, 1941-1991* (Scott AFB IL: Headquarters Military Airlift Command, 1991), 21.
[46] Ibid.

among many that ATC performed only rear area, airline type, missions, while TCC performed "…tactical missions in a combat area…."[47]

Colonel Robert Owen points out the separation also led to unique "philosophical outlooks."[48] Measurements of success are one example. Schein notes how an organization measures success is a strong indicator of that organization's culture.[49] ATC measured their success based on business models. The focus was "long-term productivity," so measurements included "aircraft utilization rates" and "ton-miles flown." TCC focused on combat, so their measures of success included "missions accomplished" and "sortie rates."[50]

Force protection is another area where norms of behavior and shared values differed. Troop carrier units accepted combat losses as part of their mission. Their feeling was the direct support of troops warranted the risk. ATC units were far more conservative. ATC's sacrifice of immediate results for long-term efficiency and protection of assets brought sharp criticism, yet ATC successfully met all the challenges put before them.[51]

The flexibility aspect of indivisibility remained strong in both ATC and TCC despite their apparent differences. The missions of both commands overlapped throughout the war. ATC found themselves frequently augmenting theater forces, notably in the Far East (China-Burma-India) and South Pacific (Philippines). Likewise, troop carrier units found themselves doing relatively few airborne assaults and becoming supply and mobility assets for ground forces, particularly in the Pacific. These operations also represented a fair degree of unity of effort.

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[47] Robert C. Owen, "Creating Global Airlift in the United States Air Force, 1945-1977: The Relationship of Power, Doctrine and Policy" (Ph.D. diss., Duke University, 1992), 18.
[48] Ibid., 25.
[49] Schein, 65.
[50] Owen, 26. A "ton-mile" is the movement of one short ton of materiel one nautical mile. A sortie is one leg of a mission, begins with a successful takeoff from an airfield, and ends with either a successful landing at the originating or a destination airfield.
[51] Ibid., 26-27.

Postwar

Three major events shaped the air mobility culture in the years following World War II, the formation of the Military Air Transport Service (MATS) in June 1948, Operation VITTLES, the Berlin airlift of 1948-49, and the formation of SAC. All promoted globalism and indivisibility. Operation VITTLES demonstrated the clear decisiveness of air mobility. During this period, the differences between the two airlift subcultures, and now the air refueling subculture, grew.

MATS furthered globalism and indivisibility within air mobility by centralizing C3 of all Air Force and Navy strategic airlift. Administrative and non-scheduled airlift within the Navy remained under naval control. The Air Force failed to include tactical airlift in this reorganization. Tactical forces remained under the control of the theater commanders.

The ongoing separation was surprising in light of the consolidated effort required to accomplish Operation VITTLES. To this day, Operation VITTLES remains the largest airlift effort ever undertaken, when measured by cargo tonnage.[52] Operation VITTLES was a United States Air Forces in Europe (USAFE) tasking, however, USAFE lacked the full range of expertise and, especially, larger C-54 cargo aircraft required to accomplish the mission. MATS provided significant augmentation of aircraft and resources, to include a senior official, Maj Gen William H. Tunner. USAFE Commander, General Curtis LeMay, appointed Tunner Commander, Combined Airlift Task Force (CALTF). CALTF combined theater, strategic and British airlift under one highly efficient organization.[53] The lack of adequate theater staffing and resources for concerted air mobility efforts is a theme that remains to today.

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[52] David K. Barrett, "Global War on Terrorism (GWOT) Study: Lessons Learned and the Need to Fix the Air Mobility System," [On-line], (Paper submitted to Headquarters, Air Mobility Command, Directorate of Plans and Programs, Doctrine and Policy Division, 15 June 2004), Available from https://private.amc.af.mil; Internet, accessed 22 September 2004, x.

[53] Office of History, MAC, 69.

The Berlin Airlift is significant to this study for two reasons. First, troop carrier aviators came to the realization that, like their experience in World War II, troop carrier missions would continue to be primarily logistical in nature. A realization that lead theater commanders to ask for a large airlifter, more technology, of their own to augment the already existing C-47 fleet.[54] Second, the Berlin Airlift showed the nation, and the world, that "…airlift is a more flexible tool for executing national policy than either fighter or bomber aircraft."[55] More importantly, airlift was decisive in securing the freedom of the people of West Berlin.

The lessons of the Berlin Airlift were quickly adapted to combat requirements. Exercise SWARMER took place in North Carolina in April and May of 1950. SWARMER tested the tactical application of strategic airlift. Many lessons came from the SWARMER experience. Perhaps the most significant lesson came from Brigadier General W. R. Wolfinbarger, Commander, Air Task Force in SWARMER, who realized the value of indivisibility of the airlift fleet.

> From the Air Task Force point of view, the highlight [sic] of the Exercise was the integration of Troop Carrier and Strategic Air Transport elements into a single Air Transport Force. It demonstrated to my complete satisfaction that Troop Carrier and Air Transport concepts are capable of successful combination and that the two elements, when jointly employed, logically and successfully complement each other in this type of an operation.[56]

Owen points out that in spite of these observations resistance to further consolidation of airlift from the troop carrier community was strong. Quoting from a 1950 edition of *Air University Quarterly Review*, he points out the belief that the "…mission, training, equipment and organization…" were so different between MATS and the troop carriers (now under Tactical Air Command in CONUS) that consolidation would not work.[57]

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[54] Miller, 182.
[55] Office of History, MAC, 72.
[56] Critique, "Exercise Swarmer," 5 May 1950, p 24; quoted in Office of History, MAC, 74.
[57] Owen, 104-105.

Tunner and MATS continued to argue for increased efficiencies of all airlift forces under one command. The tactical airlifters, hearing all the talk of tonnage, continued to argue their primary mission of support to combat forces must continue unhampered. Miller sums the nature of the argument up best.

> On the other hand, the "separate" tactical airlift supporters were equally reasonable men who were sincerely disturbed that the unique portions of their missions would be overshadowed by concerns for economy and efficiency, to the detriment of national security. Given the great differences in mission execution at the operational level, the meat-ax economies being exercised periodically by higher authorities, and the natural esprit de corps found in a combat organization, it is little wonder that troop carrier and tactical leaders resisted consolidation.[58]

Aircrews deeply believed in a fundamental difference between strategic and tactical airlift by this point. It was obvious to the members of each of these cultural subgroups that one had "it" and the other did not. What was difficult to quantify was what "it" actually was. The troop carriers based their impressions on the artifacts of mission, training, equipment, and organization. True, clear differences existed at this level. Shared values, however, were very similar. Operation VITTLES showed the dedication, courage, and loyalty of all airlift forces. Indivisibility and decisiveness were clearly shared values. The theater forces resisted globalism, especially centralized C3. Troop carrier airlift certainly had Miller's natural "esprit de corps," but so did the MATS forces. Likewise, MATS crews did place greater value in the advantages of deliberate, efficient operations. Their growing primary mission, support to SAC and its nuclear bombardment fleet, further reinforced this belief.

SAC also shaped the new air refueling mission within the Air Force. It should not be surprising that the first dedicated air refueling squadrons went to the Strategic Air Command (SAC) in 1948.[59] Strategic bombardment was the theory that built the independent Air Force and air refueling became the primary enabler for true globalism.

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[58] Miller, 217.
[59] Byrd, 69.

Two dominant cultural characteristics describe SAC forces. The first is globalism, especially centralized C3. The second is rigid adherence to the rules. Both were deemed necessities for the nuclear deterrent mission and the safety of the United States, however, being ingrained cultural characteristics, they continued to influence conventional, as well as nuclear, operations.

1955 to 1965

The period 1955 to 1965 saw the beginning of the modern strategic airlift system. This system introduced business values to the culture of MATS. When combined with a primary mission to provide airlift support to SAC, intertheater airlift began to look increasingly like a peacetime only force to the tactical airlift community. This perception led TAC to resist the growing globalism of MATS.

The Department of Defense (DOD) issued Directive 5160.2 in 1956 making MATS the single manager for airlift.[60] As single manager, the Secretary of the Air Force was responsible for all airlift within the DOD. The directive also established a program to instill discipline and efficiency into the airlift system through the introduction of industrial funding. Industrial funding, in the form of the Airlift Service Industrial Fund (ASIF), replaced normal appropriated funding for a large percentage of the airlift budget. ASIF also meant airlift users, or customers, were now required to pay for services forcing them to carefully manage the airlift resources available to them.[61]

There were both positive and negative consequences of the move to industrial funding. MATS reported improved efficiency, greater centralized control, and economical use of airlift

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[60] Office of History, MAC, 92.
[61] First, the Defense Business Operating Fund – Transportation (DBOF-T) and currently, the Transportation Working Capital Fund (TWCF) replaced ASIF in the modern era.

forces.[62] Indivisibility (unity of effort) and globalism (centralized C3) grew. Unfortunately, Directive 5160.2 made no mention of a wartime mission.[63]

ASIF, and the lack of a stated wartime mission, had an impact on the shared values of MATS crews. Crews could no longer afford the luxury of, nor did they see a clear need to, train for war. MATS aircrew would now have to fly revenue-generating flights in order to support their training needs. Few appropriated dollars were available for wartime unique preparation. Little dedicated wartime training occurred or it was tailored into revenue-generating missions. The consequence was a more business like demeanor from some aircrew, a focus on revenue and the SAC mission rather than preparation for combat, which was a task assigned to theater airlift forces.

MATS grew stronger and acquired more roles and missions in the early '60s. In 1961, the Air Force officially gave MATS the mission to "…establish and maintain equipment, manpower, and supplies, enabling…a global mobility mission."[64] This direction, contained in Air Force Regulation 23-17, was the first step toward a combat mission for MATS. Reorganization of forces also brought the C-130E and C-124 aircraft to MATS. These aircraft were the same ones flown by Troop Carrier units in Tactical Air Command (TAC), further blurring the lines between strategic and tactical airlift and increasing the globalism of MATS.

Tactical airlift forces opposed integration using the arguments that tactical crews were culturally more in concert with the Army units they supported. Colonel Louis Lindsay, TAC's chief airlifter, wrote:

> Tactical Air Command is fundamentally opposed to the consolidation of tactical and strategic airlift functions under MATS in the overseas commands because such consolidations will not insure the continuous in-place availability of essential, current tactical air and assault airlift command and staff capabilities. In the past, theater airlift organizations have always been tactically oriented with TAC providing the augmentation for smooth and rapid expansion in emergencies. The assault airlift command, staff, and

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[62] Office of History, MAC, 92.
[63] Miller, 240.
[64] Office of History, MAC, 109.

operating skills, developed in the Tactical Air Command, have regularly rotated into the theater airlift organizations. Similarly, personnel returning from overseas theaters to the Tactical Air Command have provided a continuous flow of data on current assault airlift developments, problems, and special need worldwide. Without this interchange, the continuous updating of assault airlift tactics, techniques, and procedures will be impaired. The absence of skilled assault airlift personnel in overseas airlift commands will severely limit, if not completely compromise, the capability for rapid expansion in emergencies.

Since assault airlift, tactical fighter, reconnaissance, and Army units are integrated into the basic air/ground fighting team, mutual confidence and common understanding among all of these elements are essential. Therefore, all Air Force forces involved in the combat and combat support roles have been properly grouped in Tactical Air and in the overseas Air Force component commands. Command of these tactical forces has been, and should continue to be, vested in a single tactical command whose first and full-time obligation is to the tactical mission.[65]

Again, we see a belief that tactical airlift forces share common norms of behavior with other tactical forces. These tactical forces also have unmentioned shared values that lead to "mutual confidence and common understanding."[66] The distinctions, however, became smaller with the approach of the Vietnam War.

Vietnam War

The Vietnam War narrowed the gap between the intertheater and intratheater subcultures. Combat also placed the SAC air refueling crews at odds with their leadership. A basic disconnect between the espoused value of globalism, as represented by centralized C3, and the basic assumption that loyalty to fellow aviators was of greatest importance revealed the small difference in basic assumptions between SAC and TAC.

As conventional involvement in Vietnam approached, even Secretary of Defense McNamara began to realize the merging airlift missions might be inevitable. He stated in 1964, "…the line of demarcation between the strategic airlift mission and the troop carrier or assault

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[65] Major General H. G. Thorne, Jr., deputy chief of staff, Operations, Headquarters United States Air Forces in Europe, to Headquarters USAF, letter, subject: USAF Response to DOD Airlift Study and Required Follow-on Actions, 17 July 1964, with Report of USAFE-MATS-TAC Conference on Evaluation of Airlift Consolidation in Europe attached; quoted in Miller, 280-281.
[66] Ibid.

mission may, in time, become less important."[67] MATS and TAC both used this statement to justify their various doctrinal positions concerning airlift. MATS argued "strategic" and "tactical" were terms of little relevance in the Vietnam era. MATS missions spanned from airdrop to global nuclear support and therefore MATS and TAC should share the same doctrinal guidance, be indivisible, reflecting unity of effort. TAC continued to argue in support of the highly specialized training and the inherent trust between supported units and airlifters found in tactical elements.[68]

MATS, representing rather traditional Air Force thinking, continued to argue before congress that acquisition of assault capable aircraft would eliminate the distinctions between MATS and TAC. Technology, not mission or culture, was the proposed solution. TAC was not the only organization to argue against MATS. General Paul Adams, commander of US Strike Command, also opposed the merger of missions. Arguing before congressional subcommittee, General Adams stated tactical training was intensive and specialized making it difficult to make MATS and TAC crews "interchangeable." The control of tactical missions must also be under the theater commander.[69] The positions of TAC and the US Strike Command were counter to the Air Force value of globalism.

Despite its desire to merge the strategic and tactical missions, the Air Force and Military Airlift Command (MAC) [MATS was redesignated MAC in 1966] continued to protect the usage of intertheater assets based upon their value to the nation. The new C-5A represented the extreme of this argument. By 1970, the key differences between intertheater and intratheater forces became who would fly in the face of a threat to the aircraft or mission. Assistant Secretary of the Air Force for Installations and Logistics, Phillip Whittaker, when asked if C-5s would support forces in hostile areas answered:

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[67] Doctrinal Development Committee, Headquarters Military Air Transport Service, "Timetable and Agenda," 30 November 1964; quoted in Miller, 299-300.

[68] Miller, 300-303.

There is frankly a difference of opinion. There is a feeling on the one hand that the C-5 is configured to go in as you know to secondary airfields to provide this very rapid offload to go in and make air drops of supplies. Therefore, it does have the physical capability of carrying the freight right into the forward areas.

On the other hand, you are talking about a big and pretty vulnerable piece of hardware that you don't want to subject to hostile action unless you absolutely have to.

So I can't really give you a firm answer. The intention would be to protect the C-5 to the maximum extent, subject of course to getting the necessary cargo moved to the forward area.[70]

Though designed for combat use, the C-5's ability to support global air mobility became a greater value than the requirement for the direct support of troops. Nonetheless, the C-5 finally operated in a combat environment for the first time during the 1972 Easter Offensive, delivering tanks to Da Nang.

General Momyer, Seventh Air Force commander and director of all tactical air in South Vietnam, argued again in favor of separate tactical and strategic forces in his end-of-tour report.

There is one major lesson which stands out above all others with respect to airlift and that is that tactical airlift is distinctly different than strategic airlift. It operates in an environment which demands association and integration with other tactical forces and it must be directed and controlled by the theater commander as are the other forces under his jurisdiction. Whereas the strategic airlift task can, in an ultimate sense, be handled by a commercial carrier, the theater airlift task is rooted in combat which requires emphasis on entirely different factors such as short, relatively unprepared fields, exposure to ground fire, coordination with escorting fighters and integration into the tactical control system for direction, assistance and redirection. The tactical air control center and the airlift control centers are the means by which the Air Component Commander harmonizes his forces to support the operations and needs of all forces in the theater. It would indeed be a grievous error to create a single airlift force. All of the experience and facts which have emerged from the Vietnam War again point up the validity of the separate entities of strategic and tactical airlift. Whereas, one could not tell the difference between a 707 and a C-141 cargo coming to a protected and secure base such as Cam Rahn Bay, there was never any doubt of the kind of airlift going into Khe Sanh, Lai Khe, Kham Duc and the many other bases where the tactical airlift was in a real sense a combat force under enemy fire. The lesson of Vietnam on airlift further enforces the same lessons of World War II and Korea on the separation of strategic and tactical airlift forces as combat demands have dictated the separation of strategic and tactical air forces.

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[69] Ibid., 306-307.

[70] Congress, House, Committee on Armed Services, Subcommittee on Military Airlift, *Hearings on Military Airlift*, 91st Cong., 2nd sess., 1970, 6681, statement by Phillip Whittaker, assistant secretary of Air Force for installations and logistics; quoted in Miller, 338.

Theater war demands the assignment of tactical forces which had been designed, nurtured and led by commands devoted to this highly specialized form of warfare.[71]

General Momyer also observed differences between fighter crews and air refueling crews controlled by SAC. SAC, under the concept of globalism, acted as the "single manager" of all tankers in Southeast Asia during the Vietnam conflict.[72] Sorties were scheduled and controlled from Offutt AFB, Nebraska and executed over Vietnam. This relationship caused many command and control problems in the theater, usually leaving the crews to deal with the consequences. Bases had multiple commanders, one representing Pacific Air Forces (PACAF) and one representing SAC, for instance. It also left the crews at odds with the rigid rules governing their operations.

General Momyer continued to push SAC crews to accept greater risks in order to increase morale and effectiveness of fighter aircraft. This in an environment described by Major John Casteel, a KC-135 (the most modern air refueling aircraft of the era) aircraft commander who one the Distinguished Flying Cross and MacKay Trophy for meritorious action as:

> In the Strategic Air Command we have a saying: "If you're enjoying yourself, you must be breaking some regulation." If breaking the rules can be fun, I guess we had a ball. The Command is an extremely disciplined organization because its mission is such that there is no room for error. Let me say that I firmly believe in operating by the book and in this business, if you deviate from that book, you had better know exactly what you are doing and be prepared to answer for it.[73]

SAC's culture of rigid adherence to regulation contrasted sharply with its tanker crews' camaraderie, courage, and dedication to fighter and bomber crews facing enemy action. Vietnam provided many examples of heroic deeds to save a fellow aviator. Major Vernon Byrd points out in his history of in-flight refueling:

> …No American pilot or crew failed to reach his home base, or had to leave his aircraft for lack of fuel if there was a tanker anywhere near, regardless of the

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[71] Lieutenant Colonel Jimmie Jay, *Evolution of Airlift Doctrine* (Maxwell AFB AL: Air War College, 1977), 59-60; Research Report No. 93; quoted in Miller, 347-348.
[72] Byrd, 141.
[73] Ibid., 248.

geographical location of the troubled pilot or aircraft. In that case, so far as the tanker crews were concerned, no rules applied.[74]

These comments are indicative of a Cold War organizational culture clashing with a very real, "hot" war over Vietnam.

While the Cold War demanded air refueling assets remain in SAC after the Vietnam War, the lessons of that war led Air Force Chief of Staff, General David Jones and Commander, MAC, General Paul Carlton to recognize clearly a cultural difference between the two subsets of airlift forces. Both acknowledged an "image" and "spirit" associated with tactical airlift.[75] They carefully planned a consolidation in the 1970s that would marry intra- and intertheater airlift, yet preserve the separate culture and pride of the forces.

Post-Vietnam War

Airlift forces were under one command for nearly twenty years following Vietnam. The consolidation revealed the benefits of globalism and indivisibility and the surprising compatibility of the airlift subcultures. In 1992, consolidation ended, returning theater forces to the theater commanders. This separation of forces renewed the 'tribalism' associated with the subcultures. The Air Force also disbanded SAC in 1992. Its air refueling force and its associated subculture merged with the new Air Mobility Command (AMC), MAC's replacement.

The consolidation of airlift forces was complete by February 1, 1977, when MAC was redesignated a specified command.[76] All airlift assets, strategic and tactical, regardless of theater of assignment, fell under MAC. Specified command status also implied both a combat mission

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[74] Ibid., 9.

[75] Miller, 348.

[76] A specified command is "A command that has a broad, continuing mission, normally functional, and is established and so designated by the President through the Secretary of Defense with the advice and assistance of the Chairman of the Joint Chiefs of Staff. It normally is composed of forces from a single Military Department. Also call specified combatant command." Department of Defense, U.S. Joint Chiefs of Staff. Joint Publication 0-2, *Unified Action Armed Forces (UNAAF)* (Washington D.C.: 10 Jul 2001), GL-11.

and logistical responsibility for supported forces worldwide.[77] The period of time during which

MAC remained a specified command is marked by further organizational refinement of forces,

changes in thinking about airlift, and force modernization.

MAC's role as a specified command grew with a changing global security environment.

The US became involved in operations demanding force projection around the world. The

overthrow of the Shah of Iran and Soviet invasion of Afghanistan in the late '70s thrust US forces

into action in the Middle East and Indian Ocean where they have remained since. Humanitarian

efforts around the globe stressed a developing mobility system. Operations URGENT FURY,

JUST CAUSE, and DESERT STORM highlighted the necessity for rapid global mobility.[78]

Congress continuously reevaluated the contribution of both MAC and airlift to these

demands. It became obvious that airlift alone was not the answer. The union of airlift, sealift,

and propositioning of equipment became the only effective method of supporting a truly global

power projection capability. US Transportation Command became operational on 1 October

1988 relieving MAC of its specified command status and providing the US with a functional

combatant command over all mobility operations.[79] US Transportation Command furthered the

Air Force ideals of globalism, indivisibility, and decisiveness.

For the first time, doctrine seriously addressed the union of strategic and tactical airlift.

Basic doctrine manuals from the '80s describe airlift as a mission unto itself, rather than a sum of

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[77] Miller, 352.

[78] Operation URGENT FURY, 1983, took place on the island of Grenada in the Caribbean Ocean. Its primary purpose was the maintenance of stability within the western hemisphere. Operation JUST CAUSE occurred in 1989 and resulted in the capture of the Panamanian dictator Manuel Noriega and reinstatement of democracy in Panama. Operation DESERT STORM removed Iraqi occupation forces from Kuwait in 1991.

[79] Office of History, MAC, 201; A functional combatant command is defined in *UNAAF* (GL-5) as a "…specified command with a broad continuing mission under a single commander established and so designated by the President, through the Secretary of Defense and with the advice and assistance of the Chairman of the Joint Chiefs of Staff. Combatant commands typically have geographic or [in this case] functional responsibilities."

parts. The basic airlift mission was neither strategic nor tactical. The goal, or purpose, of a specific mission is what determined if it was a strategic or tactical mission.[80]

The ultimate indicator of the merging of missions was MAC's largest modernization program of the time, the acquisition of the C-17. General Robert "Dutch" Huyser, Commander in Chief, MAC, stated as early as 1979, "I believe state-of-the-art technology has us at a point where we should not define such an aircraft as tactical or strategic – we just discuss it as an airlifter capable of dual roles."[81] Technology, again, becomes a critical enabler to the achievement of globalism.

The C-17 has indeed redefined tactical and strategic airlift. It has the strategic capability in range and cargo capacity comparable to the C-5. The C-17 can also land on semi-prepared short fields (as little as 2,500 feet) comparable to the C-130. The merging of capabilities realized an often previously discussed, but one never before technologically feasible, mission of direct delivery. Direct delivery missions operate over strategic ranges in close support of combat operations, often terminating far forward in the battle area. The advantage of direct delivery is the elimination of transloading cargo and personnel from a strategic aircraft to a tactical aircraft in order to reach the final destination.

It was against this backdrop, combined with the fall of the Soviet Union and recent success in Operation DESERT STORM, that General Merrill McPeak, Chief of Staff of the Air Force, reorganized the entire US Air Force in 1992. Mobility assets, which now included air refueling, became part of AMC, which continued as the air component of US Transportation Command. C-130s were the only brief exception to this policy. They became part of ACC with fighter and bomber assets until 1997.

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[80] Miller, 414-415.
[81] General Robert Huyser, commander in chief, Military Airlift Command, to General Slay, commander, Air Force Systems Command, message, 222100Z October 1979, quoted in Miller, 388.

The period 1992-1997 reestablished in the minds of many C-130 crewmembers, the tactical airlift mindset found during the years preceding MAC. The watershed event of this period was Operation UPHOLD DEMOCRACY, the intervention in Haiti in 1994. Many issues in the planning and execution of the aborted airdrop of XVIIIth Airborne Corps at Port au Prince led General Jon M. Loh, Commander, ACC, to focus the C-130 community on its tactical role. General Loh initiated the development of a tactical 'center of excellence' for combat aerial delivery. This center of excellence, the Combat Aerial Delivery School combined follow-on operational test and evaluation, tactics development and evaluation, tactics instruction, and oversight of airlift participation in US Army combat training centers under one organization. This organization has the mission to promote and enhance all tactical issues, to include a mindset focused on combat, throughout the tactical airlift fleet.

Air Mobility Command saw the value of this approach and developed a similar mobility center of excellence, the Air Mobility Warfare Center (AMWC). AMWC absorbed the ACC's Combat Aerial Delivery School in 1997 after the return of the CONUS-based C-130s to Air Mobility Command. C-130s, and even KC-135s, in the Pacific and Europe remained assigned to PACAF and USAFE.

The return of the C-130 to AMC brought together the three dominant subcultures of air mobility for the first time. Melding these subcultures into one mobility culture would prove a challenge.

CHAPTER FOUR

CONTEMPORARY ISSUES

The Dominant Subcultures

Air Mobility Command combines intertheater airlift, intratheater airlift, and air refueling under one command. Its primary mission is rapid global mobility. This mission has not been a

strong enough unifying force to eliminate the existence of dominant subgroups within the mobility culture.

The three dominant subgroups continue to be intertheater, or strategic, airlift, intratheater, or tactical, airlift, and air refueling. The cultures of these subgroups are paradigms (defined as "assumptions and beliefs") found along a continuum between the "tactical paradigm" and "operational paradigm" as defined by Maj Scott Rizer in an Advanced Studies in Air Mobility thesis.[82]

The tactical paradigm emphasizes "…using combat oriented processes and under limited centralized control." Strategic and operational level planners develop objectives and determine tasks and purposes for subordinate units. Communication of missions to crews is via an Air Tasking Order (ATO). The crews themselves determine how to accomplish the mission. To effectively execute within the tactical paradigm, tactical employment experts must reside at the squadron level.[83] The tactical paradigm seems to reject the globalism value in favor of the indivisibility (especially flexibility) of theater forces.

The operational paradigm contrasts sharply. Rizer points out under the operational paradigm, "…employment decisions are made at the operational level under a high degree of centralized control." A necessary step given the assumption aircrews lack a 'macro' view of the system.[84] Globalism is very strong in this subculture.

The intratheater airlift subculture is adheres to the tactical paradigm. These units maintain the tradition of the troop carrier squadrons proudly. A walk through any C-130 squadron will reveal pictures of C-47s over Normandy and C-130s with the famous sharks teeth of the Far East Air Forces painted on their noses. These artifacts represent the values of courage, camaraderie, and loyalty to theater forces. Rizer rightly points out that when a C-130 unit

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[82]Major Scott Rizer, "The Impact of Organizational Culture on KC-135 Combat Education and Training" (Masters Thesis, Air Force Institute of Technology, May 2002), 4, 34.
    [83] Ibid., 34-35.

accomplishes its tactical mission it becomes part of the theater force. It changes operational control (CHOPs) from AMC to the supported theater commander and operates under the tactical paradigm. The ATO delivers daily taskings. Unit tacticians and intelligence personnel carefully review the day's missions and brief the crews on critical considerations. The focus of effort is on the supported theater commander and his ground and air forces.[85]

Intratheater airlifters do not operate exclusively in the theater environment. When not deployed, intratheater airlift focuses on training and peacetime, air mobility missions. A typical C-130 unit is responsible for generating approximately half their operating budget from industrial funding (ASIF is now known as the TWCF, Transportation Working Capital Fund). Aircrews generally adopt the operational paradigm for peacetime missions. AMC's air operations center (AOC), the Tanker Airlift Control Center (TACC) transmits daily taskings and crews are expected to accomplish them in the same way the intertheater forces would.

The intertheater airlift subculture follows the operational paradigm. A truly global mission managed by the TACC on a daily basis characterizes intertheater airlift. TACC executes centralized control under using procedures much akin to a dispatcher in an airline operation. The experts in this subculture thoroughly understand the enroute support structure provided by AMC and the command and control procedures associated with it. Knowledge of "…command and control relationships, procedures, and standards," is highly valued under this paradigm.[86]

The air refueling subculture, due to its rather recent emergence from SAC, operated at the extreme of the operational paradigm in the mid- to late-1990s. Cultural orientation presented many challenges to the air refuelers. For years, they operated under the strict SAC view of globalism and centralized C3. Under AMC, aircrews had to learn a new set of C3

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[84] Ibid., 35-36.
[85] Ibid., 36-37.
[86] Rizer, 35-36.

"…relationships, procedures, and standards."[87] Contingency operations, like Operation ALLIED
FORCE, the air war over Serbia in 1999, fought to end violence in Kosovo, presented the new
challenge of executing missions outside of the centralized C3 demanded by the operational
paradigm.

ALLIED FORCE saw theater air refueling assets operated by Air Mobility Command and
theater commanders, without the benefit of the strict centralized control SAC provided in
previous contingency operations. The Kosovo air refueling operations were very inefficient.
This inefficiency led to the over deployment of tanker assets, affecting the ability of the
remainder of AMC to accomplish its ongoing global mobility mission. The inevitable cultural
shift for the air refueling subculture was a move away from the extreme operational paradigm of
the cold war era to a more moderate position similar to the intertheater airlift fleet. [88] Training
programs for both leadership and aircrews were developed. These training artifacts reflect the
new value placed on theater support and the relationship between theater and global missions.

The year 2001 brought these three subcultures their greatest challenge, the largest air
mobility operation since Operation VITTLES. Operations ENDURING FREEDOM and IRAQI
FREEDOM have stressed the mobility forces in both new ways and in some very old ways.

Operation ENDURING FREEDOM

Operation ENDURING FREEDOM (OEF) challenged the MAF in many ways.
Weaknesses resulting from the effective blending of the mobility subcultures revealed themselves
in a lack of globalism and indivisibility. Many other issues resulted from the dominance of the
operational paradigm within the command, leaving aircrew unprepared for tactical operations.

On the night of 7 Oct 2001, OEF commenced in the skies and on the ground of
Afghanistan. The second wave of attacks that night contained a previously unprecedented

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[87] Ibid.

mission. Two C-17 aircraft flew over 6,500 miles round trip to drop over 35,000 humanitarian

daily rations to the people of Afghanistan while simultaneous combat operations were conducted

against Taliban and Al Q'aeda targets. Crews had expected to conduct forced entry operations

using airborne insertion at the onset of hostilities, but few expected to be conducting

humanitarian relief, deep in enemy territory on the first night of a campaign.[89]

The C-17's were not alone. KC-10s, a larger and more modern air refueling aircraft than

the KC-135, operated deep within Afghanistan during the initial attacks as well. These missions

crossed the traditional concept of a forward edge of the battle area (FEBA) in order to support

strike operations in a non-contiguous battle space. KC-135 air refueling assets also operated over

enemy territory, often in support of aircraft that required refueling at lower altitudes. These lower

altitudes exposed the KC-135 crews to significant amounts of surface-to-air fire.[90] The KC-10

and KC-135 aircraft cannot sustain great amounts of enemy fire; therefore, crew training largely

neglects operations in enemy territory. These aircrews demonstrated a tremendous amount of

courage and dedication.

Headquarters AMC reported air refueling aircrews lacked the necessary training to use

minimum risk departures and arrivals in and out of host nation airfields. Other training

deficiencies affected the ability of aircrew to accomplish doctrinal missions of the tanker fleet.

These deficiencies included threat recognition and avoidance, defensive maneuvers, and combat

radio procedures.[91]

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[88] Lieutenant General William J. Begert, "Kosovo and Theater Air Mobility," *Aerospace Power Journal* Vol XIII, No. 4 (Winter 1999): 11-21.

[89] Master Sergeant Randy Mitchell and Master Sergeant Kenneth Fidler, "Food Airdrop to Afghans Underscores President's Humanitarian Pledge," [On-line] *U.S. Air Forces in Europe News Service* (Oct 8, 2001), Available from http://www.usafe.af.mil/airdrop/news.htm; Internet: accessed 27 October 2004.

[90] Operations ENDURING FREEDOM and IRAQI FREEDOM information comes from the personal experience of the author while serving as a member of Headquarters, Air Mobility Command, Combat Operations Division (HQ AMC/DOK) from March 2001 to September 2003.

[91] Headquarters, Air Mobility Command, Combat Operations Division, "Minutes of OIF Tanker Lessons Learned from an Aircrew and Wing Operations Center (WOC) Perspective," (Scott AFB IL: 28 August 2003), 2; quoted in Barrett, 6-7.

C-17 humanitarian airdrop missions continued for 74 days. These missions delivered over 2.5 million humanitarian daily rations using 5,292 Tri-Wall Aerial Delivery Systems (TRIADS) and 667 Container Delivery Systems (CDS). Five hundred twenty-one CDS bundles delivered 55,000 55-pound sacks of wheat and 42,000 blankets.[92] The humanitarian relief mission was a success by any measure, but not without some significant lessons learned.

The failure of the MAF to promote globalism within all its subcultures led to crucial organizational difficulties during the airdrop operations. As reported in a study sanctioned by AMC's doctrine division:

> The mission commander for the humanitarian airdrops in OEF stated, "One of the big lessons learned is that our command and control is more sophisticated now. We've moved forward, further down the road. In Afghanistan, thirteen different people, either directly or indirectly, told me that I worked for them."[93]

The airlift system had not anticipated a strategic aircraft performing an almost exclusively tactical mission in support of one regional combatant commander, operating from another regional combatant commander's area of responsibility, while under the operational control of a functional combatant commander. Air Mobility Command leadership did not anticipate command and control issues this complex.

> I was on the AMC staff in the mid to late 80s when we were conceptualizing the C-17. A key question was what would the C-17's direct delivery capability really mean to the mobility structure? Based on C-17 operations in this current crisis [OEF], we missed the boat back then by 95 percent. We had always looked at the C-17 as a strategic airplane with tactical capability, and that vision persists today. What we didn't understand was that we were going to build a tactical airplane with a strategic capability. The dichotomy in those two visions is what we need to get rid of…and decide whether we're an airline or a fighting force. If we're an employer of combat power across strategic as well as tactical distances, then that is going to define our paradigms….[94]

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[92] Captain Aaron Burgstein, "Daily Humanitarian Flights From Ramstein Come to an End," [Online] *U.S. Air Forces in Europe News Service* (Dec 21, 2001), Available from http://www.usafe.af.mil/airdrop/news.htm; Internet: accessed 27 October 2004.

[93] Colonel Robert R. Allardice, USAF, interview by Air Mobility Command – Task Force Enduring Look, 17 July 2003, Scott AFB IL, 6; quoted in Barrett, 3-10; Colonel Allardice served as C-17 Mission Commander for the OEF humanitarian airdrop missions.

[94] Colonel Mark D. Still, USAF, interview by Air Mobility Command – Task Force Enduring Look, 31 October 2002, Scott AFB IL, 15; quoted in Barrett, 4-6 to 4-7; Colonel Still served as 21st AF Director of Operations during OEF.

Indivisibility was another problem during OEF. Flexibility suffered due to a lack of focus on airdrop technology. Major General Richard Mentemeyer, Director of Mobility Forces for OEF, explained the issue best.

> In these hot times we tend to say we really need to go and do that and somebody talks about it and then puts it on the shelf. And I'll tell you; I'm a convert. I used to think that airdrops should go way (sic)…that we're past airdrop. That was old World War II stuff. And, boy, how much time we spent training with the Army to do these airdrops and when was the last time we did one? I used to be…an advocate for really downsizing our airdrop. Not anymore. That airdrop [OEF] was absolutely critical to our mission. And actually what I learned was because we really don't put enough emphasize (sic) on carrying the technology to do airdrops, so as a result, the airdrop that we do now is the same airdrop capability since World War II. What I really needed…was a very highly technical, off-the-shelf [capability]…there's new technology to put on bombs that we ought to be able to put on every CDS [Container Delivery System] package…takes them to the target and we need it from a stand-off capability…but the reason we need to have the accuracy is because in that mountainous terrain [Afghanistan], 50 yards, which sounds pretty good to us, may have gone off a cliff…we really need to develop that capability for our airdrop because otherwise you're wasting assets.[95]

November 2001 saw the transition of airlift operations from combat airdrop to a combat airland mission at Rhino Landing Zone (LZ) in southern Afghanistan. The high threat and austere conditions of the dirt landing zone demanded the use of night vision goggles to safely execute the mission. These night vision goggle operations were at once one of the greatest success stories of OEF and one of the greatest shortfalls.

Airlift aircrews have used night vision devices for several years. However, this use has been limited largely to special operations missions. The 1990s saw the first widespread use of night vision devices by the C-130 crews assigned under Air Combat Command. Air Mobility Command largely halted this use in 1997 as the command grappled with the challenges of incorporating the C-130 fleet into the AMC training structure. Night vision goggle (NVG) use returned to almost exclusively special operations qualified crews.

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[95] Major General Richard A. Mentemeyer, USAF, interview, Air Mobility Command, Air Mobility Warfare Center DIRMOBFOR Debrief, 20 February 2003, 6; quoted in Barrett 6-7; Major General Mentemeyer served as Director of Mobility Forces (DIRMOBFOR) for OEF from September to December 2001.

AMC Special Operations Low-Level II (SOLL II) qualified C-17 crews conducted the initial non-special operations landings into Rhino LZ. The pace of operations soon grew beyond the capability of these few crews. AMC initiated a 'just-in-time' training plan to qualify C-130 and C-17 aircrews in NVG landing operations. In a matter of months, over 300 crews were qualified in this procedure. This just-in-time plan was an unqualified success; the failure lay in the inability of AMC to anticipate the requirement earlier.

Night vision landing was not the only just-in-time training demanded. The threat faced by AMC aircrew demanded increased threat training and awareness. Aggressive tactical arrival and departure procedures minimized the risk to aircraft. Many of these maneuvers had been tested, some had not. Many of the crews received training well before the war, while some received just-in-time training. C-17 pilots also executed high gross weight, short field landings, at a high-density altitude. A lack of experience and training led to several damaged aircraft due to landing short of the runway or with an excessive rate of descent executing these landings.[96]

Colonel Mark Still summarized the concerns of many with the following comment:

> I think it is wrong that we as a command allowed our aircrews to get themselves into a position where they had to execute tactics or operate airplanes in a manner that we had not trained them to do…to expect crews to perform relatively high-risk maneuvers without proper training and without a proper vetting of that decision, I think is bad.[97]

Conveniently classified as training shortfalls, most of these lessons reflect the normal tension between peacetime and wartime operations. The distinction is even harder to discern in the mobility world. MAF crews conduct a wide range of operations on a daily basis in peacetime. These operations range from humanitarian and disaster relief to routine airlift to contingency response. "We do our wartime mission everyday!" a saying heard quite often around AMC, captures the importance and tempo of these operations. While major combat elements of the

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[96] Barrett, 4-6 to 4-8.
[97] Still, 7; quoted in Barrett, 4-7.

mission occur on a daily basis, most in the MAF now realize that they do not occur in the *environment* of war.

Successfully meeting the challenges posed by OEF allowed MAF aircrews to hone their combat skills. These combat skills would be necessary in the MAF's next great challenge, Operation IRAQI FREEDOM.

Operation IRAQI FREEDOM

The successes of Operation IRAQI FREEDOM (OIF) came from the keenly developed combat skills and growing combat mindset within the MAF. Failures revealed themselves as the airlift flow increased and the seams built into the air mobility system became gaps due to a lack of globalism.

C-130 crews participated primarily with V Corps forces in the now storied race to Baghdad. March 20, 2003 saw the beginning of breaching operations on the berm between Kuwait and Iraq. Many C-130s and crews supported the 82d Airborne Division in a planned airborne operation against an Iraqi target. The unexpected speed at which V Corps progressed through An Nasiriyah, As Samawah, and An Najaf left the vital lines of communication (LOCs) to the most forward elements vulnerable to attack.

Major General Chuck Swannack, Jr., Commanding General, 82nd Airborne Division, anticipating tasking from the Combined Forces Land Component Commander (CFLCC), Lieutenant General David McKiernan, directed his troops to derig their equipment and prepare for a ground convoy mission, supported by C-130 airland missions. CFLCC released the 82nd to V Corps on 26 March. Over the next three days, the 82nd moved by convoy and C-130 to Tallil Air Base, outside An Nasariyah. The 82nd went on to isolate As Samawah and secure the V Corps main supply routes (MSRs). Follow-on C-130 missions included forward area resupply

via airdrop and airland along the leading edges of the attack and eventually into Baghdad International Airport.[98]

Six days later, the C-17s first combat personnel airdrop occurred on 26 March. Seventeen C-17s dropped 965 paratroopers of the 173rd Airborne Brigade and their equipment outside Bashur, Iraq in only "...the 44th combat jump in US history...."[99] An additional 1,200 soldiers and their equipment was brought in over the next three days. Total, 2,160 soldiers and 381 vehicles moved from Aviano Air Base in Italy to Bashur in 96 hours by 62 C-17 sorties. Task Force 1-63 Armor joined the 173rd supported by another 27 C-17 sorties. "The 'air bridge' supporting the 173rd…demonstrated the tremendous utility of both strategic and tactical airlift and the enormous flexibility they provide the joint commander."[100]

The third major air mobility combat operation occurred on 2 April when C-17s moved TEAM Tank (C Company, 2-70 Armor) from Tallil AB to H-1 Airfield in western Iraq in support of the Joint Special Operations Task Force – West (JSOTF-West). Fifteen sorties moved "…10 M1A1 tanks, three M113 armored personnel carriers, a FST-V fire-support vehicle, two fuel trucks, three cargo trucks, and an HMMWV…" over three days. The US Army's history of OIF credits the C-17s with the success of this mission. "The C-17s and their crews provided flexible and responsive support to a complex problem. They exemplified the exceptional agility the US joint forces displayed in applying the right units to the right mission."[101]

All airlift crews performed with valor and courage. Success came from the recent lessons of OEF and the application of the tactical paradigm by all airlift forces in the theater. However, Intertheater airlift continued to operate under an operational paradigm.

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[98] Colonel (Ret) Gregory Fontenot, Lieutenant Colonel E.J. Degen, and Lieutenant Colonel David Tohn, *On Point: The United States Army in Operation Iraqi Freedom*, (Fort Leavenworth KS: Combat Studies Institute Press, 2004), 211-213.
[99] Ibid., 222.
[100] Ibid., 222-229, 411.
[101] Ibid., 253.

Not everyone found the strategic deployment system as responsive as the tactical airlift system.

> According to McKiernan, that system is "a peacetime efficiencies based system. So every airplane and every ship is validated and loads are validated and efficiencies gained so no space goes unvalidated. To me, it doesn't work worth a damn in contingency operations."[102]

Ground commanders were not the only ones to take issue with the obvious seams between theater and strategic forces.

> That particular night, all the missions (from Tabuk AB, Saudi Arabia) had TCAS (Terminal Collision Avoidance System) equipped C-130 H-2 and a half model airplanes. However, when they got to Tallil (AB, Iraq), unbeknownst to us, there were also C-17s arriving to deliver cargo. So, on NVGs and using TCAS, our aircrews were able to deconflict with the C-17s that we didn't know were going to be there. Because of the way the ATO (Air Tasking Order) works and the way the strat airlift system works, we never got the ATO changes that showed that we would have this competing traffic…the C-130s CHOPPED [change of Operational Control] to theater did a good job talking with each other to coordinate and deconflict missions – where company traffic was going to be, what frequencies were being used, how they were going to deconflict if they got somebody on TCAS, who was going to be on the ground, and who was going to take longer to offload.…So, when the C-17s showed up that night and we couldn't talk to them, it was just another unknown the crews got to deal with.[103]

OEF / OIF presented (and continues to present) great challenges to the air mobility fleet. The Global War on Terrorism, however, will continue for years, possibly decades. What challenges will it bring to the MAF?

CHAPTER FIVE

21ST CENTURY CHALLENGES

Future challenges for air mobility fall primarily into two categories. The first category is the overall security environment. The second is the roles and missions that carried out in that environment. Careful analysis of these roles and missions within the context of the security

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[102] Lieutenant General Dave McKiernan, commander, CFLCC, interview by Colonel James Ebrey, Colonel James Greer, Colonel Neil Rogers, and Colonel Steve Mains, 1 May 2003; quoted in Fontenot, 406.

[103] Colonel Jimmie L. Simmons, Jr., USAF, interview by Air Mobility Command – Task Force Enduring Look, 27 June 2003, Scott AFB IL, 9; quoted in Barrett, 3-19. Colonel Simmons served as vice

environment will reveal the type of effort, and consequently, the necessary culture for success. Chapter six addresses this culture.

Security Environment

United States Joint Forces Command describes the future security environment in a white paper titled, *The Joint Operational Environment – Into the Future*.[104] The MAF faces significant challenges in the future. Air mobility will become the key enabler of an expeditionary military. This role and air mobility's inherent vulnerability makes it a lucrative target to enemy attack.

The most significant characteristic of the joint operational environment is a blurring of the lines between war and peace, and combatants and non-combatants. Future enemies will be ambiguous in their actions. They will avoid outright acts of war and settle for lower forms of aggression. Time will be "compressed." In the past, air mobility relied on the ability to perform "just-in-time" training for those combat tasks not routinely used and deemed "easy" to train in a hurry. This luxury is gone and will not return anytime soon. Force protection will also be critical since the threat will be truly global.[105]

The United States will continue its global engagement for the next several years. This global engagement continues to bring the U.S. up against enemies who have significantly different military capabilities than our own. Many of these enemies are growing and developing their military forces, however, they find themselves at a disadvantage when faced with U.S. power. This "gap" or "asymmetry" in the strength and types of forces employed by both sides has forced America's enemies to become adaptive. They seek new ways to "…exploit perceived U.S. vulnerabilities and to counter or mitigate U.S. strengths."[106]

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commander, 485th Air Expeditionary Wing, Tabuk, Saudi Arabia from 5 March to 6 May 2003 and then Deputy DIRMOBFOR for OIF.

[104] Joint Forces Command, U.S., Director of Intelligence. *The Joint Operational Environment – Into the Future* (Norfolk VA: Coordinating Draft, 05 March 2004).

[105] Ibid., 98-100.

[106] Ibid., 11.

A significant U.S. strength is air mobility. Air mobility leverages a "…smaller, more continental United States (CONUS) based force."[107] It allows for "quick and decisive responses [which] can diffuse crises before they escalate, deter further aggression, or in some cases, defeat an adversary before it can solidify gains."[108] Air mobility is also the "…backbone for sustained combat operations."[109]

The above characteristics make air mobility a lucrative target. The same small, CONUS based force enabled by air mobility may be crippled if denied the ability to deploy, employ and sustain. Our enemies will attempt to disrupt air mobility, not just to deny deployment, but also to affect the accomplishment of the mission.[110]

Aerial ports of embarkation and debarkation (APOE/APOD) are where air mobility assets are most vulnerable to attack. Attacks on air mobility assets arriving and departing from APOEs/APODs have the purpose of denying U.S. access to a given area of responsibility. "The adversary will seek to disturb deployment, employment, and sustainment activities in CONUS, en route, and in areas of responsibility."[111]

The desire to eliminate APOEs means there is no longer a sanctuary for air mobility forces. The attacks of 9/11 show that not even the CONUS offers security to air assets. "Future enemies will attempt to disrupt power-projection capabilities by attacking installations, information systems, or transportation nodes."[112] These nodes include CONUS airfields.

These security environment issues lead to some fundamental shifts in how the enemy will fight and view war on the tactical level. Actions which we view simply as "…small-scale contingencies or stability operations and support operations, the adversary may view as nothing

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[107] AFDD 2-6, 1.
[108] Ibid.
[109] Ibid.
[110] USJFCOM, 68.
[111] Ibid., 94.
[112] Ibid., 95.

short of war to be won at any cost."[113] The enemy may attack airfields to cause "…large

numbers of causalities with only moderate risk."[114] Unconventional warfare forces may attack

staging airfields. The enemy will use civilians to disrupt aerial port operations. Attacks against

aircraft will occur on the ground rather than in aerial combat or by surface to air missiles. [115] The

global threat to air mobility assets will increase even as roles and missions change.

Future Roles and Missions

Two major actors define future roles and missions. First is the United States Army, the

agency most often supported by air mobility operations in a joint environment. Army

transformational efforts lend an important glimpse at future demands placed on the mobility

system. Second, USAF transformation efforts, both internal concepts of providing air mobility

and the USAF's own demands for air mobility, are major drivers of roles and missions.

U.S. Army Transformation

United States Army Transformation Roadmap 2003[116] details how the U.S. Army plans to

meet Department of Defense directed transformation requirements. The transformation centers

on the 'Future Force,' a label placed on the goal of current efforts. Attributes and missions of the

Future Force will place air mobility assets under stress and combat threats more frequently. The

use of air mobility as an enabler is critical to Army plans as well.

Expeditionary is one attribute of the Future Force. "Delivering the right Army forces at

the right place and time is essential to a JFC's [Joint Force Commander's] ability to defeat any

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[113] Ibid., 126-127.
[114] Ibid., 127.
[115] Ibid., 128-133.
[116] Department of the Army, U.S. *United States Army Transformation Roadmap 2003*,
(Washington D.C.: 1 November 2003).

adversary or control any situation across the full range of military operations."[117] The Army will be required to "...deploy, employ and sustain forces..." anywhere in the world, rapidly.[118]

Adaptable is another important attribute. Tailoring of force packages allows the Army to respond to the full-spectrum of operations. These forces will maneuver over great distances and may conduct forced entry operations.[119]

Army will place robust demands upon the MAF during major combat operations. "Combinations of strategic and intra-theater lift must compensate for physical constraints such as austere environments and limited improved ports of debarkation (PODs), and they must simultaneously meet requirements for strategic power projection, operational employment, and continuous sustainment throughout the JOA [Joint Operating Area] to ensure operational agility."[120] Simultaneous operations will demand the use of multiple APOEs with many forces flowing in parallel to each other. These forces, and their necessary supplies, will deploy directly to forward areas in order to generate speed, power, and surprise, and reduce predictability.[121]

Air mobility operations are required to support Global Strike operations as well. Global Strike operations are specific strategic deterrence operations that prevent "...aggression or coercion by adversaries that threaten vital interests of the United States." [122] These operations demand rapid force projection and increased Special Operating Forces support. Sustainment of Global Strike assets is as critical as their deployment.

Several enablers for Future Force missions are currently under study. One enabler is operational maneuver from strategic distances (OMFSD). OMFSD will require air mobility to cross the seam between strategic and operational maneuvers. The goal of this seamless operation

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[117] Ibid., 1-7.
[118] Ibid.
[119] Ibid., 1-8.
[120] Ibid., 3-4.
[121] Ibid.
[122] Ibid., 5-1 to 5-3.

is to "…present forces in proximity to forward operating areas throughout the course of the campaign."[123]

Intra-theater, or tactical airlift, will continue to be required. The Army sees operational maneuvers using intra-theater assets as an important way to accomplish maneuver and maintain "logistical agility." [124] Traditional missions such as forward area resupply, airborne operations (tactical vertical envelopment), and forward deployment of troops and materiel will continue into the future.

The tactical vertical envelopment operations include global positioning system (GPS) guided platforms. GPS systems, under the Precision, Extended Glide Airdrop System (PEGASYS) program, will deliver Future Combat System fighting platforms to the forward battle area ready to fight.[125] PEGASYS is from high altitudes, neutralizing the enemy threat. Its accuracy "…facilitates dedicated aerial sustainment and helps achieve full distribution-based logistics."[126]

U.S. Air Force Transformation

The U.S. Air Force Transformation Flight Plan and the *Air Mobility Master Plan 2004* address air mobility transformation.[127] Together these two documents describe the U.S. Air Force plan to meet the challenges of joint transformation and future conflict. The Air Force's Global Mobility Concept of Operations (CONOPS) is the focus of air mobility transformation. Transformation reflects the Air Force values of globalism and indivisibility and support to theater

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[123] Ibid., 7-6.
[124] Ibid.
[125] The Future Combat System is a concept for an armored fighting vehicle similar to today's Stryker vehicle.
[126] U.S. Army, *Transformation*, 8-17.
[127] Department of the Air Force, U.S. Headquarters United States Air Force, Future Concepts and Transformation Division. *The U.S. Air Force Transformation Flight Plan.* (Washington D.C.: November 2003); Headquarters, Air Mobility Command. *Air Mobility Master Plan 2004* (Scott AFB IL, 2004).

forces gains more emphasis. Air mobility leaders must use cultural change to complement the Air Force's emphasis on technology as a solution to transformation.

The Global Mobility CONOPS recognizes the necessity for future power projection and sustainment. Rapid response prevents the adversary from escalating crises and prohibits his ability to mobilize and deploy forces. Three mission areas have direct impact on air mobility operations. These are power projection through air mobility, global command and control, and expeditionary air bases.[128]

Power projection and global command and control strengthen, and are wholly consistent with, the espoused value of globalism. Future air mobility operations will require seamless integration between theaters, joint forces, and coalition forces in order to support combatant commander objectives. Global command and control is necessary to facilitate this seamless integration and respond quickly to crisis. Strengthening the interface between air mobility's global C3 and other services and forces will make deployment and sustainment more effective. A critical interface is the establishment of APODs. [129]

Mobility forces will rapidly assume control of recently seized airfields to full-up airhead operations. Indivisibility demands these operations remain under the control of an Airman. The "…ability to establish air base operations and quickly position forces and equipment where they are needed," is the focus of near term USAF transformational efforts.[130]

The Global Strike CONOPS requires a capability to "…respond within hours…while maintaining the ability to rapidly swing high priority forces to another major theater war." [131] The Army transformation plan has already shown the requirement to do this under austere conditions in far forward areas supporting the full-spectrum of possible operations, from humanitarian relief through major combat operations.

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[128] USAF, *Transformation*, 42.
[129] Ibid.
[130] Ibid., 66.

Future Air Force plans to meet these challenges are based primarily on materiel solutions. Plans include greater numbers of improved airlift and air refueling aircraft. Improved self-protection systems will keep aircraft safe in the threat environment. All weather capabilities and enhanced command and control compatible with both theater and strategic C3 systems improve the ability to conduct operations in all natural and combat environments. The goal is the ability to transport the Army's Future Combat System "…regardless of weather conditions, over intercontinental ranges to unimproved landing areas in a threat environment." [132] Materiel solutions will not be enough. Cultural change must occur to successful accomplish missions in the joint operating environment.

CHAPTER SIX

REQUIRED CULTURE

Mobility's New World

In his article, "Between Two Worlds," Dr. David Mets describes how "…mobility forces have shouldered the burden of living between the worlds of logistics and combat." [133] These two worlds have now merged. Inter-theater and intra-theater, strategic and tactical, have merged to the point where it is almost meaningless to discuss a difference between missions, effects, and operating environment. Air mobility's subcultures are now detrimental to success. A new mobility culture based on globalism and indivisibility must arise. Threat awareness, loyalty to theater forces, and tactical skills are a few of the values and artifacts that will mark this new culture. The subcultures must preserve the most beneficial of the old values, even as new ones are developed.

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[131] Ibid., 67.
[132] Ibid.
[133] Dr. David R. Mets, "Between Two Worlds: Fodder For Your Professional Reading on Global Reach and Air Mobility," *Aerospace Power Journal* Vol XVI, No.1 (Spring 2002): 49.

C-17 crews have developed a culture that bridges the spectrum of air mobility missions. AMC chose the initial crews from all major weapons systems within the command. Forced blending of cultures paid some initial rewards, however, the demands of the inter-theater airlift mission diminished many of them through the '90s. OEF allowed the C-17 community to finally hone their combat skills.

All MAF crews, regardless of aircraft, must now adopt this combat culture, a culture that shares many values not previously seen throughout the entirety of the MAF. These values include an in-depth knowledge of the enemy threat. Many MAF crews can discuss with you the most critical elements of every system and subsystem on their aircraft, but few know even the basics about enemy threat systems. Norms of behavior, specifically current training and evaluation standards, which emphasize systems knowledge while merely acknowledging threat knowledge, reinforce this value.

Aircrews must understand the role of their specific mission. The overall efficiency of the system drives decision-making when the inevitable friction of any operation occurs. However, there are times when crews would make markedly different decisions if C3 communicated the true nature of a mission. Many times an apparently routine flight from Dover AFB, Delaware to Ramstein AB, Germany actually contains items critical to success in combat. Combat support missions often warrant greater risk and less overall efficiency in order to accomplish a critical task.

All air mobility pilots must value tactical skills as greatly as instrument procedures and pilotage. Most pilots work extremely hard to develop very accurate and precise instrument takeoff and landing skills, air refueling skills, and to master the enroute command and control structure. Defensive maneuvers and reactions, short-field landings, ground operations in austere environments, and night operations must generate the same pride and receive the same emphasis. No sanctuary exists for air mobility. Even CONUS airfields have a threat element.

Many of these values have begun to change and leadership must continue to encourage the merging of the subcultures. The new challenge may actually be the preservation of the strongest and most distinct element of the air mobility culture, the inter-theater / strategic mindset, a mindset based on the oldest Air Force value, globalism. One Wing Commander has noted,

> …We now have a generation of soon-to-be young aircraft commanders who have only seen stage operations in Operation Enduring Freedom and Operation Iraqi Freedom. These pilots have not experienced global mobility operations. They've gone through the same five or six bases, and they've seen the same stage operations. They haven't been out on independent operations and haven't experienced some of the unique situations that they can find themselves in.[134]

It is obvious that new tactical skills cannot replace the traditional long-range mindset. These new tactical skills cannot be ignored either. The overall mobility effort must rise to a new level. When not flying, crews will need to dedicate time to tactics education. Study of enemy systems and enemy and friendly tactical procedures must become routine. More convenient and easily scheduled daytime training must yield to increased night tactical training. All of this in the midst of a tremendous mobility surge demanding increased time and sorties spent conducting strategic and operational movements. The demands of contemporary operations mean crewmembers cannot make this cultural shift alone. Leadership has a role as well.

Role of Leadership

Leadership has a tremendous role in all transformational efforts. Most transformational efforts attempt to change the culture as a first step. For example, the Army states, "The first component is the transformation of Army *culture* through leadership and adaptive institutions…Leaders shape behavioral change, and this is the first step to cultural change. A transformational cultural shift will carry over into other areas [emphasis added]."[135] Culture,

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[134] Colonel Scott E. Wuesthoff, Commander, 436th Airlift Wing, Dover AFB, DE, interview by Air Mobility Command – Task Force Enduring Look, 28 April 2003, 12; quoted in Barrett, 3-21.

[135] U.S. Army, *Transformation*, ix-x.

however, is exceedingly difficult to change in established organizations. Leadership cannot directly change culture. It can facilitate, however, cultural change.

The Air Force also acknowledges the importance of cultural change. The Air Force plans many technological changes, but states, "Equally important, if less glamorous, are the organizational concepts that capitalize on the technological advances and allow the Air Force to transform." [136] By discussing organizational changes as a means to facilitate cultural change, the Air Force seemingly subscribes to the theories of John Kotter.

Kotter states, "Whenever you hear of a major restructuring, reengineering, or strategic redirection in which step 1 is "changing the culture," you should be concerned that it might be going down the wrong path." [137] Most cultural change happens at the end of a transformational process, not the beginning. Remember, most culture is invisible and extremely hard to change.

Kotter advocates an eight-stage process for change. Air Mobility Command has been successful using this process, though it is unknown if by design. The following paragraphs outline the eight steps and how AMC has accomplished them. [138]

Step 1. Establish A Sense of Urgency. Recent major transformational efforts within AMC correspond to the tenure of its current commander, General John Handy. General Handy accepted command within weeks of the Sept 11, 2001 attacks on the World Trade Center in New York. These attacks and the United States response to them provided the ultimate tool against complacency, a state of war.

Step 2. Creating the Guiding Coalition. The selection of General Handy, a career airlifter with more than 300 combat hours in the C-130 over Vietnam, as AMC's commander came at the right time. To accomplish his vision of MAF transformation, he assembled a guiding coalition of other tactically minded, yet mobility focused individuals. AMC's Vice Commander,

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[136] USAF, *Transformation*, 31.
[137] Kotter, 157.
[138] Ibid., 21.

Lieutenant General John Baker, is a career fighter pilot and distinguished graduate of the USAF

Fighter Weapons School, the Air Force's premier tactical employment school. He also brings

significant information operations expertise as the former commander of the Air Intelligence

Agency. The commander of AMC's sole Numbered Air Force (NAF), Lieutenant General

William Welser, is a former commander of the Air Mobility Warfare Center. These three

individuals have the four key characteristics of an effective guiding coalition: position power,

expertise, credibility, and leadership.[139]

Step 3. Developing a Vision and Strategy. The clearest statement of AMC's vision and

strategy for achieving that vision is the *Air Mobility Master Plan* (AMMP). The Commander's

vision and intent is clearly one of a unified mobility system, seamless in nature, without dominant

subcultures. The AMMP replaces the terms inter- and intra-theater airlift with "mobility

operations," a more accurate description of current and future roles and missions.[140]

Step 4. Communicating the Change Vision. AMC's vision for change is clear in the

AMMP, policy statements, and messages such as the one from Major General Volcheff in chapter

one of this document. One very effective tool used to communicate transformational efforts has

been "The Air Mobility 'Flight Plan.'"[141] AMC leadership successfully communicates current

transformational efforts and explains their intent and purpose through this medium.

Step 5. Empowering Broad-Based Action. The most significant step made toward the

empowerment of broad-based action has been the transformation of organizational structure and

the removal of bureaucratic obstacles. The elimination of 15th and 21st Air Force and their

replacement by a single, warfighting NAF, 18th Air Force did both. This new structure facilitates

streamlined C3, laying the groundwork for globalism. The TACC, AMC's Air Operations

Center, works directly for the 18th AF commander giving him a robust warfighting C3

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[139] Ibid., 57.
[140] HQ AMC, AMMP, 2-5.

capability.[142] Even the designation 18ᵗʰ AF has a purpose in transformation. In 1951, 18ᵗʰ Air

Force became as the first NAF dedicated to the troop carrier aviation mission. Eighteenth AF

gave troop carrier aviation direct access to the Commander of Tactical Air Command and equal

footing with fighter forces. [143] This is another very effective way for AMC to communicate their

vision!

Step 6. Generating Short-Term Wins and **Step 7. Consolidating Gains and**

Producing More Change. These steps involve making incremental steps toward the vision.

Each 'win' demonstrates the value of the vision and serves to undermine opposition. It provides

the stepping-stones to the ultimate goal. Consolidation establishes a new starting point for the

next set of changes and wins.[144] The process and events of OEF and OIF represent short-term

wins. Changes like 18ᵗʰ AF and revised TTPs are consolidations of these short-term wins into

plateaus. These plateaus allow for even greater gains.

Step 8. Anchoring New Approaches in the Culture. Cultural change is the last step,

not the first. Time must pass to change how new members to the organization are socialized and

to allow deep underlying values and basic assumptions to begin to change. Kotter warns success

depends on results. It must be clear that the changes work. Lots of talk is also required. This

involves instruction and support of the aircrew. Turnover may be necessary to eliminate those

few who are too inflexible to change. The greatest turnover issue is succession. Leaders who

succeed those currently in the guiding coalition are likely to slip back into the old culture if not

carefully chosen.[145]

AMC is currently in the midst of step 7 of Kotter's model. There have been many short-

term wins, consolidation is occurring, and as implied, a new culture is beginning to emerge. This

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[141] Headquarters, Air Mobility Command, "The Air Mobility 'Flight Plan,'" [On-line] Available from https://private.amc.af.mil; Internet: accessed 5 December 2004.
[142] Ibid.
[143] Owen, 108.
[144] Kotter, 21.

new culture centers on those who are strong advocates of a new, tactical culture and those who have become part of the mobility team in the last 4-5 years and really know no other culture. AMC has not anchored these changes though. Only positive steps will complete the transformation effort.

CHAPTER SEVEN

CONCLUSION

The Mobility Air Forces and Air Mobility Command have reached a crossroads. Eighty plus years of history has brought the dual worlds of logistics and combat closer and closer together. The changes necessitated after the 9/11 attacks and the current leadership of AMC are merging these two worlds into one.

This study has shown that the Mobility Air Forces have always risen to the demands placed upon them. Roles and missions, though doctrinally and organizationally distinct, have always overlapped. The World War II era found ATC forces accomplishing troop carrier missions in the Pacific. The Post-War era found both groups struggling for relevance and increased mission capability leading to the acquisition of the same aircraft and a tremendous similarity in mission. The Vietnam experience led to the eventual combining, although somewhat temporarily, of the strategic and tactical airlift communities into one. The end of the Cold War and major transformational efforts within the Air Force as a whole finally brought the majority of the air mobility assets under one organization with a largely shared mindset.

The drivers of cultural separation within the MAF were largely artificial. Technology, especially the inability to truly command a global force and aircraft that lacked range and cargo capacity hampered globalism. A false indivisibility, based upon the theater commander's mission, rather than global air mobility further reinforced doctrinal and organizational separation, driving cultural separation in turn.

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[145] Ibid., 157.

The dominance of the intertheater subculture did indeed lead to failures in OEF. The value of flexibility, inherent in all air operations, allowed the MAF to successfully recover from these initial failures and perform admirably throughout OEF and OIF.

It is now incumbent upon leadership to solidify the cultural shifts of the OEF / OIF period by combining all air mobility forces under Air Mobility Command. MAF leadership must make changes now to exploit this nexus in history and solidify a new organizational culture, maximizing globalism and indivisibility. This organization, and its supporting unified culture, is necessary to meet the demands of a globally engaged, expeditionary, and adaptable military that will be deployed in the face of an ever-growing global threat. No sanctuary will exist. The entire world is now a battlefield.

It is clear that this cultural change can be neither wholly emergent nor solely dictated by leadership. Only through well thought out, proactive guidance combined with a new generation raised in the realm of mobility operations will cultural change firmly root itself in the MAF. This culture must be one prepared to embark upon the full-spectrum of mobility operations.

Recommended Changes

As stated, no cultural change comes solely through emergence. Leadership must establish the conditions. The following recommended steps will take the MAF to a place where 'mobility operations' truly replace inter- and intra-theater airlift.

Doctrine. As an artifact, current doctrine represents a culture of "…rules and regulations…"[146] To become a culture that values "…tactical thinking warriors," new doctrine is required.[147] Publication of Air Force TTP 3-1, *Tactical Employment*, and AFTTP 3-3, *Combat Aircraft Fundamentals*, for all AMC major design series (MDS) aircraft, represents a positive step. These are the TTP evolutions Major General Volcheff referred to in his letter calling for

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[146] Volcheff, 1.
[147] Ibid.

cultural change. TTP changes will ultimately fail without corresponding changes to AFI 11-2MDS, Volume 3, *Operations Procedures.* The instructions must become *Operations Policy.* The bulk of most Vol. 3s is procedural in nature. The AFTTP 3-3 volumes largely replace and expand upon the Vol. 3 information. All that should remain in the AFI is actual policy. 'How to' issues belong in the TTPs.

Organization. Globalism must become a real value within AMC. As the air component of United States Transportation Command (USTRANSCOM), AMC must become the single owner of all air mobility operations. Seams in the mobility system must be eliminated, similar to the current efforts within USTRANSCOM to eliminate seams in the distribution system. True global mobility, from fort to foxhole, is required to handle the challenges of a merged inter- and intra-theater environment. Eighteenth AF provides the command and control structure necessary to enable this change.

The removal of air mobility forces from the theater requires AMC to adapt a new focus on theater support. Currently, Air Mobility Operations Control Centers (AMOCC) manage theater air mobility operations. The AMOCCs must transfer ownership to AMC and assume roles similar to the theater Air Divisions that MAC had. They will become true forward arms of the TACC, providing in-theater C2 for all AMC assets. Contingency Response Groups (CRG) will accomplish the mission of transitioning seized airfields to airhead operations mentioned in chapter five. The CRGs enable rapid forward presence of aerial port and airfield security units to accept immediate hand-off from ground forces after an airfield seizure.

Training. Training across the board must become more combat oriented. Basic aircraft qualification training must incorporate far more than how to fly a mobility aircraft. From day one, training must include threat knowledge, defensive tactics and maneuvers, night operations, and austere operations. The AFTTP manuals are as important and as central a component of training as the aircraft operating manuals and technical orders. All evaluations and continuation training need to reflect this increased importance.

Integrated training that emphasizes indivisibility and survivability is also required. Distributed mission simulator training, allowing for virtual multiple aircraft operations, leverage the small amount of training time available to the air mobility fleet. Aircrews will be able to train and rehearse with supporting and supported aircraft in a dynamic environment on a routine basis. Exercise participation in theater level exercises such as Red Flag and the Joint Readiness Training Center must also increase.

The Air Mobility Warfare Center must take the critical central role in tactics training. Specifically, the Mobility Weapons School (MWS) and its graduates, weapons officers, need to continue their efforts to promote and teach tactical expertise. The MWS teaches all weapons officers how to effectively instruct AFTTP 3-1/3 procedures. As the "instructor of instructors," the weapons officers are the key to the training portion of this transformation. The MWS must continue to grow and expand.

Materiel. Aircrews will not embrace a combat mindset without the materiel required to accomplish the combat mission successfully with the appropriate amount of risk. One of leadership's critical roles is providing the proper equipment. Aircraft capable of meeting the demands of operational maneuver from strategic distances are required. More C-17s and upgraded C-130s have limited capabilities in a high-risk, austere environment. Development must begin now on a new advanced tactical transport to meet the Army's vision of support to the Future Force.

Self-protection systems are required to defend against the growing global, asymmetric threat. These systems may include situational awareness devices, infrared jammers, expendable countermeasures, and cockpit armor.

Operations from austere airfields are more effective with enhanced night vision systems and improved instrument takeoff and landing systems. GPS-guided airdrop platforms may eliminate the need to even use austere airfields in many situations.

Leadership Development. Current efforts to blend the air mobility subcultures are similar to the methods used to select the C-17 initial cadre. Mobility leadership hopes to develop future leaders by removing them from one subculture and placing them in another through a 'crossflow' program. Acculturation, however, takes time. Depth of expertise related to a given aircraft is usually required for acceptance as part of a subculture. Time is not a luxury in a twenty to thirty year Air Force career. As a result, crossflow is failing to accomplish its goal.

A far more effective approach is the careful management of mid-career staff assignments. Those officers identified as future mobility leaders need exposure to the aspects of air mobility they are least familiar with during these tours. Proper management will result in a mobility leader with a depth of expertise in a given specialty and a breadth of knowledge across all aspects of air mobility.

Personnel. More personnel have to focus on theater missions. TACC does not have the manning to support theater planning or operations. The AMOCCs can handle only one theater. Theaters outside of Europe and the Pacific do not have AMOCCs and frequently lack the numbers or expertise required to properly execute mobility operations. Expansion of the current Expeditionary Mobility Task Forces (EMTF), deployable air mobility C3 structures, is the best way to provide responsive, focused support to the theaters. This support must be habitual to be truly effective. Routine exercises and deployments will be required to guarantee proper training and theater preparedness of the EMTFs.

Facilities. Theater air operations center facilities must account for mobility operations. Indivisibility demands it. The practice encountered during Operation ALLIED FORCE, where separate facilities housed mobility operations and the AOC must not happen again. Integration of forces and C3 is a necessity for unity of effort and maximum flexibility. Both the combat and mobility forces will learn and grow from frequent interaction with each other. Ownership of the entire air mobility mission greatly increases the MAF's requirement for theater interaction, rather than diminishes it.

These changes will not totally transform the MAF's culture, but they will serve to consolidate the gains already made. None of this will be easy, but the results will be well worth the effort. The current and future operating environments will not permit the luxury of adherence to a purely operational mindset at the expense of a tactical one. All members of the MAF must adopt a new unified mindset carefully weaving both the operational and tactical paradigms, a mindset embodying a combat mobility culture.

The overall trends in air mobility history have paralleled those of the Air Force as a whole. As those with a strategic bombardment vision, the bomber generals, dominated the Air Force from World War II through the Vietnam era, so to did similar strategic minded leaders dominate the MAF. Post-Vietnam, advocates of AirLand Battle doctrine, the fighter generals, emerged as stronger and took control of the Air Force. Likewise, more tactically minded leadership, schooled in the same crucible of Vietnam, dominated the MAF in the '80s and '90s.

These strong parallels require the author to echo the warning of Col Mike Worden in *Rise of the Fighter Generals*. Worden warns against parochialism and bias in homogenous leadership and cultures.

> Homogeneity, as defined by shared experience, limits a total view of the institution's legitimate role. This organizational condition leans towards myopia and monistic thinking, often manifested in a consuming focus on a purpose or mission that favors the dominant culture. When these organizations face inevitable environmental or contextual change that challenges the existing paradigm, they fail to recognize the need for change because of their uniformity of perspective. This perspective also limits alternatives and adaptability to the change.[148]

As the subcultures within the MAF continue to coalesce and combine, leadership must continue to have "…broad education and experience and a diversity of views…."[149] These tools allow leaders to recognize and anticipate change. They also preserve the distinctness and core mission of the MAF. True, the ability to operate tactically must increase, but as an enabler to global, sustained airlift operations, not in-lieu of them. Major General Volcheff is correct when

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[148] Worden, 238.

he states, "The capability to conduct global, sustained airlift operations, in non-permissive

environments, is unique to the United States and is critical to achieving our national

objectives."[150]

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[149] Ibid.
[150] Volcheff, 1.

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